

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A lithographic apparatus comprising:
a radiation system to provide a projection beam of radiation;
a support structure to support a patterning device, the patterning device constructed and arranged to pattern the projection beam according to a desired pattern;
a substrate table to hold a substrate;
a projection system to project the patterned beam onto a target portion of the substrate;
said radiation system further comprising:
a beam delivery system comprising redirecting elements to redirect said beam from a radiation source to an illumination system wherein said radiation source is arranged to provide a beam having a predetermined polarization state and said redirecting elements are arranged to provide a minimum polarization related radiation loss, and
wherein said beam delivery system is constructed and arranged to maintain the predetermined polarization state relative to each of said redirecting elements.
2. (Original) A lithographic apparatus according to claim 1, wherein said redirecting elements are dielectric mirror elements and said beam is arranged to have an s-polarisation state relative to each of said mirror elements.
3. (Original) A lithographic apparatus according to claim 1, wherein said beam delivery system comprises at least one polarizing plate to modify a polarization state of said radiation beam.
4. (Original) A lithographic apparatus according to claim 3, wherein said polarizing plate is a half lambda plate.
5. (Currently Amended) A lithographic apparatus according to claim 3, wherein said polarizing plate is integral with one of said ~~mirror~~ redirecting elements.

6. (Currently Amended) A lithographic apparatus according to claim 5, wherein said polarizing plate is bonded to one of said ~~mirror~~ redirecting elements.

7. (Original) A lithographic apparatus according to claim 1, wherein each of said redirecting elements defines a plane of incidence, and wherein all planes of incidence of all redirecting elements are parallel to each other.

8. (Currently Amended) A mirror element comprising a dielectric reflective layer and a polarizing layer to provide a predetermined polarization state of a radiation beam relative to the reflective layer so as to reflect substantially all of said radiation, the polarizing layer being integral with said dielectric reflective layer.

9. (Original) A mirror element according to claim 8, wherein said polarizing layer is a half lambda layer for light having a predetermined wavelength in the range of 248-127 nm.

10. (Currently Amended) A device manufacturing method comprising:
producing a beam of radiation having a predetermined polarization state;
directing the beam of radiation through a plurality of redirecting elements to an illumination system, the directing being performed such that polarization-related radiation losses are reduced and such that the predetermined polarization state relative to each of said redirecting elements is maintained;
patterning the beam of radiation according to a desired pattern; and
projecting the patterned beam of radiation onto at least a portion of a radiation sensitive layer on a substrate.

11. (Original) A method according to claim 10, the method further comprising arranging said beam to have an s-polarisation state relative to redirecting elements used in the directing.

12. (Original) A method according to claim 10, wherein the beam of radiation which is directed to the illumination system has a substantially square cross-section.

13. (Currently Amended) A beam delivery subsystem for use with a lithographic apparatus comprising:

a plurality of redirecting elements to redirect to direct a beam of radiation having a predetermined polarization state from a radiation source to an illumination system of the lithographic apparatus, the redirecting elements being arranged to provide a minimum polarization related radiation loss,

wherein said beam delivery system is constructed and arranged to maintain the predetermined polarization state relative to each of said redirecting elements.

14. (Original) A beam delivery subsystem as in claim 13 wherein the beam and redirecting elements are mutually arranged such that the beam has a substantially s-polarization state relative to at least one of the redirecting elements.

15. (Original) A beam delivery subsystem as in claim 14 wherein the beam has a substantially s-polarization state relative to each of the redirecting elements.

16. (Original) A beam delivery subsystem as in claim 13 wherein the beam has a substantially square cross-section.

17. (Currently Amended) A method of manufacturing a lithographic apparatus employing radiation of a predetermined polarization state, comprising:

arranging a radiation system to provide a beam of radiation with said predetermined polarization state, the radiation system including dielectric mirror elements to redirect the beam from a radiation source and at least one polarizer arranged between at least two of said dielectric mirror elements to modify said radiation to an s-polarization state relative to the dielectric mirror elements.

18. (Original) A method according to claim 17, wherein the radiation system is constructed and arranged to produce the beam of radiation such that it has a substantially square cross-section.

19. (Original) A method according to claim 17, wherein the radiation system and mirror elements are mutually arranged such that the beam, when provided, has a substantially s-polarization state relative to at least one of the redirecting elements.

20. (Original) A method according to claim 19, wherein the beam, when provided, has a substantially s-polarization state relative to each of the redirecting elements.